STRUCTURE 65D

This structure is a reinforced concrete, gated spillway with discharge controlled by four cable operated vertical lift gates and a reinforced concrete lock structure with two pairs of sector gates. Operation of the spillway gates is manually controlled. The structure is located on Canal 38 about 9.3 miles downstream from S-65C and 41 miles downstream from Lake Kissimmee, and 4 miles below the U.S. Highway No. 98 bridge over the Kissimmee River.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 38, the Kissimmee River; it was designed to pass the design flood (30% of the Standard Project Flood) without exceeding the upstream flood design stage and restricts downstream flood stages and channel velocities to the non-damaging levels of the design flood, even if the inflow exceeds that flood; and it passes sufficient discharge during low-flow periods to maintain downstream stages and irrigation demands.

SPILLWAY OPERATION

This structure will be operated, subject to hydraulic restraint, to maintain an optimum headwater elevation of 26.8 insofar as possible.

Structure Limitations

The maximum water level drop across the structure will be 8 feet.

Hydraulic Limitations

To prevent damage from high velocity discharge, the gate opening will be limited in accordance with the "Maximum Allowable Gate Openings" (MAGO) curve.

LOCK OPERATION

The hydraulic system is designed to provide two gate speeds of operation. Normal speed is determined by the hydraulic pump capacity and will result in a peripheral gate speed of approximately 6.75 feet per minute which is equivalent to a full gate travel in three minutes. A manually variable slow speed is achieved by reducing the quantity of oil flowing to the hydraulic motor accomplished by energizing a solenoid valve thereby connecting in a variable flow bleedoff or bypass system. Slow speed will be considered as effecting a three feet per minute peripheral gate speed.

Starting and stopping of pump power unit and the direction and normal or slow speed of gate travel will be manually controlled by the operator except that the gate speed will automatically shift to slow for the last six inches of gate travel to either the full open or closed position. This six inch limit may be changed in the field as conditions dictate and the slow speed is manually variable by an adjustment of the flow control valve to compensate for seasonal or other extreme variations of differential water levels.

The schedule of lock operation, as established by the U.S. Corps of Engineers in accordance with the River and Harbor Act of August 8, 1917 (49 Stat. 266; 33 U.S.C.1) is as follows:

Monday through Friday	All year	8:00 a.m. to 5:00 p.m.
Saturday and Sunday	Mar. 1 through Oct. 31	5:30 a.m. to 7:30 p.m.
Saturday and Sunday	Nov. 1 through Feb. 28	5:30 a.m. to 6:30 p.m.

FLOOD DISCHARGE CHARACTERISTICS

	Design	Standard Project Flood
Discharge Rate	21,300 cfs	23,500 cfs
	30 % SPF	100 % SPF
Headwater Elevation	28.0 feet	32.4 feet
Tailwater Elevation	23.3 feet	26.4 feet
Type Discharge	uncontrolled submerged	uncontrolled submerged

DESCRIPTION OF SPILLWAY STRUCTURE

Type reinforced concrete gated spillway

Weir Crest

Net Length 108 feet

Elevation 13.1 feet

Service Bridge Elevation 34.5 feet

Water Level which will by-pass structure 34.5 feet

Gates

Number 4

Size 13.8 ft. high by 27.8 ft. wide

Type vertical lift gates

Bottom elevation of gates, full open 28.7 feet Normal,
32.4 feet Maximum

Top elevation of gates, full closed 28.8 feet

Control manual

Lifting Mechanism

Normal power source commercial electricity

Emergency power source LP gas motor driven generator

Type Hoist Hydraulic cylinder activated by electric motor driven pump, with emergency hand pump; connected to gate by steel cables.

Date of Transfer: February 10, 1966

ACCESS: From U.S. Highway 98 via about 5 miles of access road known as Lofton Rd.

Points of possible flooding _____

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level upstream recorder in lock control house, downstream recorder on lock wingwall

Gate Position Recorder None

Other _____

SPILLWAY DEWATERING FACILITIES

Storage Okeechobee Field Station

Type steel bulkhead

Size and Number (per bay)

The spillway gate section can be dewatered by using eleven standard bulkheads and one special bulkhead. The bulkheads shall be oriented and placed in the bulkhead recesses of Structure 65D spillway with the skin plate side of the bulkheads facing the spillway gate. The bulkheads can be stacked on top of each other to a maximum

of 6 bulkheads on the upstream side and 6 bulkheads on the downstream side in order to dewater the spillway gate section. The one special bulkhead shall be placed first in the upstream bulkhead recess and then up to 5 standard bulkheads may be stacked on top of the special bulkhead. Each bulkhead is 3'-5" high, 1'-9" wide, and 28'-7" long.

DESCRIPTION OF AUXILIARY STRUCTURES

Additional releases may be made through a culvert structure into the old channel of the Kissimmee River. This CMP culvert structure S-65DX is located through the tie-back levee about 1,600 feet west of S-65D. Details of this structure are as follows:

Barrels	Length	Diameter	Invert Elev.	Control	Operation
2	82'	66"	16.0	slide gates	manual

A coffer dam was built at upstream S-65DX to protect the rusted culvert. Now, the culvert is back in service.

DESCRIPTION OF LOCK STRUCTURE

Type reinforced concrete lock, with two pairs of gates

Operating Deck Elevations 34.5 feet

Lock

Length 90 feet

Width 30 feet

Invert Elevations 12.5 and 18.0 feet

Gates

Type sector

Size upper 14.5 lower 20.0 feet high; 18.8 feet radius

Control manual

Operating Mechanism

Normal Power Source commercial electricity

Emergency Power Source LP gas engine driven generator

Type double wire rope drum unit with worm type special reducer, powered by electric motor driven hydraulic motor.

Dewatering Facilities

Location S-65E

Type steel bulkheads

Size and Number 5 upstream and downstream
1'-6" wide X 3'-6" high X 31'-3" long